

This listing of claims will replace all prior versions, and listings, of claims in this application.

LISTING OF CLAIMS:

Claims 1-39 (Cancelled).

Claim 40 (New): An isolated N-acetylglucosamine-1-phosphotransferase comprising an α -subunit, a β -subunit and a γ -subunit, wherein the α -subunit comprises an amino acid sequence that is at least 70% identical to SEQ ID NO:1, the β -subunit comprises an amino acid sequence that is at least 70% identical to SEQ ID NO:2, and the γ -subunit comprises an amino acid sequence that is at least 70% identical to SEQ ID NO:3.

Claim 41 (New): The isolated N-acetylglucosamine-1-phosphotransferase of Claim 40, wherein the α -subunit comprises the amino acid sequence of SEQ ID NO:1.

Claim 42 (New): The isolated N-acetylglucosamine-1-phosphotransferase of Claim 40, wherein the β -subunit comprises the amino acid sequence of SEQ ID NO:2.

Claim 43 (New): The isolated N-acetylglucosamine-1-phosphotransferase of Claim 40, wherein the γ subunit comprises the amino acid sequence of SEQ ID NO:3.

Claim 44 (New): A composition comprising the isolated N-acetylglucosamine-1-phosphotransferase of Claim 40 and a carrier.

Claim 45 (New): A composition comprising the isolated N-acetylglucosamine-1-phosphotransferase of Claim 41 and a carrier.

Claim 46 (New): A composition comprising the isolated N-acetylglucosamine-1-phosphotransferase of Claim 42 and a carrier.

Claim 47 (New): A composition comprising the isolated N-acetylglucosamine-1-phosphotransferase of Claim 43 and a carrier.

Claim 48 (New): An isolated polypeptide, which comprises an amino acid sequence that is at least 70% identical to SEQ ID NO:1 and has the activity of a biologically active α -subunit of N-acetylglucosamine-1-phosphotransferase.

Claim 49 (New): The isolated polypeptide of Claim 48, which comprises SEQ ID NO:1.

Claim 50 (New): A composition comprising the isolated polypeptide of Claim 48 and a carrier.

Claim 51 (New): A composition comprising the isolated polypeptide of Claim 49 and a carrier.

Claim 52 (New): An isolated polypeptide, which comprises an amino acid sequence that is at least 70% identical to SEQ ID NO:2 and has the activity of a biologically active β -subunit of N-acetylglucosamine-1-phosphotransferase.

Claim 53 (New): The isolated polypeptide of Claim 52, which comprises SEQ ID NO:2.

Claim 54 (New): A composition comprising the isolated polypeptide of Claim 53 and a carrier.

Claim 55 (New): A composition comprising the isolated polypeptide of Claim 53 and a carrier.

Claim 56 (New): An isolated polypeptide, which comprises an amino acid sequence that is at least 70% identical to SEQ ID NO:3 and has the activity of a biologically active γ -subunit of N-acetylglucosamine-1-phosphotransferase.

Claim 57 (New): The isolated polypeptide of Claim 56, which comprises SEQ ID NO:3.

Claim 58 (New): A composition comprising the isolated polypeptide of Claim 56 and a carrier.

Claim 59 (New): A composition comprising the isolated polypeptide of Claim 57 and a carrier.

Claim 60 (New): A composition comprising an isolated polypeptide which comprises an amino acid sequence that is at least 70% identical to SEQ ID NO:1 and has the activity of

a biologically active α -subunit of N-acetylglucosamine-1-phosphotransferase; and an isolated polypeptide which comprises an amino acid sequence that is at least 70% identical to SEQ ID NO:2 and has the activity of a biologically active β -subunit of N-acetylglucosamine-1-phosphotransferase.

Claim 61 (New): The composition of Claim 60, which comprises SEQ ID NO:1 and SEQ ID NO:2.

Claim 62 (New): The composition of Claim 60, further comprising a carrier.

Claim 63 (New): An isolated N-acetylglucosamine-1-phosphotransferase which has a specific activity of at least 10^6 pmol/h/mg.

Claim 64 (New): The isolated N-acetylglucosamine-1-phosphotransferase of Claim 63 which has a specific activity of at least 5×10^6 pmol/h/mg.

Claim 65 (New): The isolated N-acetylglucosamine-1-phosphotransferase of Claim 63 which has a specific activity of at least 12×10^6 pmol/h/mg.

Claim 66 (New): A composition comprising the isolated N-acetylglucosamine-1-phosphotransferase of Claim 63 and a carrier.

Claim 67 (New): A composition comprising the isolated N-acetylglucosamine-1-phosphotransferase of Claim 64 and a carrier.

Claim 68 (New): A composition comprising the isolated N-acetylglucosamine-1-phosphotransferase of Claim 65 and a carrier.